The international biochemical community has lost a valued colleague with the death of Richard I. (Dick) Gumport in Chicago on Oct. 13. Gumport devoted his research career to the study of enzymes that act on nucleic acid substrates and to the characterization of biologically important protein-nucleic acid interactions. Moreover, he contributed generously to his profession through his service as a journal editor, as an educator and administrator and through his commitment to the promotion of international scientific cooperation.

Born in Pocatello, Idaho, on June 23, 1937, Dick Gumport worked his way through the University of Chicago with a variety of jobs and received a Bachelor of Science in general biology in 1960. His lifelong commitment to nucleic acids and the enzymes that catalyze their reactions can be traced to his doctoral studies on RNA polymerase, completed in 1968 at the University of Chicago with Samuel B. Weiss. The commitment was strengthened and broadened by Dick’s subsequent research as a National Institutes of Health postdoctoral fellow with I. Robert Lehman at Stanford University from 1968 to 1971. With Lehman, he identified a covalent intermediate in the DNA ligase reaction, namely an adenyl moiety derived from the NAD+ (or ATP, depending on the source of the enzyme) substrate linked to an active site lysine residue as a phosphoramidate. Dick often cited his experiences in the Stanford biochemistry department as inspiration for his ideal of an academic department as a close-knit community of collaborating scholars.

Dick joined the faculty of the biochemistry department at the University of Illinois at Urbana-Champaign in 1971 and spent his entire career there. He was the first full-time faculty member in the fledging Urbana campus of the University of Illinois College of Medicine, and he devoted much energy to the biochemical education of medical students and to administrative service to the medical school. At Illinois, Dick’s research initially centered on phage T4 RNA ligase. In collaboration with Olke C. Uhlenbeck, he demonstrated that RNA ligase could be used to join oligoribonucleotides, and he developed this method as a valuable tool for synthesis of RNA oligomers of defined sequence. Subsequently, Dick extended the use of RNA ligase to the joining of oligodeoxyribonucleotides, which was widely adopted in DNA synthetic chemistry. Recognizing the extraordinary value of DNA oligomers of known sequence as research tools, Dick became one of the pioneers in adapting newly developing methods of chemical synthesis of DNA oligomers, which could then be joined to form larger oligomers using RNA ligase. DNA oligomers prepared in Dick’s lab were used in pioneering studies with techniques that are now universally used: site-directed mutagenesis, primers for sequencing, templates for in vitro synthesis of RNA and mapping the specificity of protein-nucleic acid interactions. Often, Dick gave his oligomers to other researchers with no expectation of co-authorship.

Dick and Jeffrey Gardner, his colleague in Illinois’ microbiology department, conducted a productive collaboration for more than 20 years. They investigated the mechanism of site-specific recombination in bacteriophage lambda via characterization of integrase, integration host factor (IHF) and Xis and FIS interactions with DNA and the roles of these interactions in the regulation of the directionality of recombination and in forming nucleoprotein complexes. They also collaborated on research on the mechanism of transcription attenuation in regulation of the Escherichia coli threonine biosynthetic operon.

Dick’s interest in DNA synthesis led him to develop methods for the incorporation of base analogues into syn-
thetic oligomers for use in detailed characterization of DNA recognition by proteins, both in collaboration with others and in his own laboratory. He conducted an extensive program of research into DNA recognition by the EcoRI and RsrI restriction endonucleases and methyltransferases, a group of four proteins chosen because they all bind to the same DNA sequence but catalyze different reactions and have little amino acid sequence homology. His studies provided valuable insight into the details of DNA recognition by these enzymes.

As is clear from this description, Dick Gumport believed strongly in research collaboration rather than competition. He was devoted to the highest standards of research integrity and effective education, and he gave abundantly of his time in support of those ideals. He served as associate head of the department of biochemistry at Illinois for 12 years and as acting head for one year, and he was associate dean of the University of Illinois College of Medicine, Urbana campus, from 2002 to 2007. Dick generously devoted his efforts to the work of several American Society for Biochemistry and Molecular Biology committees and served for 10 years on the Journal of Biological Chemistry editorial board. An avid traveler, Dick enthusiastically supported international cooperation in biochemistry. He was among the American biochemists who traveled to China after the end of the Cultural Revolution as part of the China-United States Biochemistry and Molecular Biology Examination Administration (CUSBEA) program in 1984 and in many subsequent years. He formed scientific collaborations with biochemists in Russia, Finland and Turkey. Dick was honored by the award of a Guggenheim Fellowship in 1979 and election as a fellow of the American Academy of Arts and Sciences in 2001.

No retrospective of Dick Gumport’s life and career would be complete without remembering his wonderful sense of humor. It provided a sense of perspective and made him a delightful colleague. “Academic politics are so vicious,” he’d say, “because the stakes are so small.” His e-mail messages closed with a quote from Mark Twain: “There is something fascinating about science. One gets such wholesale returns of conjecture out of such trifling investments of fact.”

Below are reflections from his friends and colleagues.

Dick embodied the ideals of the true intellectual university professor. He was a citizen of the world with an insatiable curiosity, rock-solid integrity and a clear eye for reality filtered by a sense of humor that would have made Mark Twain envious. He was a mentor to many and showed us all how to live according to strong and honest values. He leaves an incredible void, and we miss him profoundly.

Bradford Schwartz
Dean of the Urbana campus
University of Illinois College of Medicine

Knowing Dick for more than 30 years both as a colleague in the restriction enzyme field and as an executive editor of Nucleic Acids Research, I grew to respect and admire him greatly. He combined the professionalism of a journal editor and scientist with the fun-loving exuberance of a committed researcher. I cannot remember a dull moment when Dick and his wife, Bobbie, were around. Laughter and friendship (plus a little alcohol) were the order of the day. He was very much a scientist’s scientist, who set a marvelous example of how to live and love life both in and out of the laboratory. I miss him greatly.

Richard J. Roberts
New England Biolabs

Dick and I arrived as rookie assistant professors from West Coast postdocs in the fall of 1971. Since we shared long hair, an abhorrence of neckties and an interest in nucleic acids, it was perhaps inevitable that we became firm friends and collaborators. Dick first suggested that the newly discovered T4 RNA ligase could solve my difficulties and the resulting paper got us tenure and launched our careers. Dick was a joy to collaborate with — optimistic, careful, funny, hard working and thoughtful. Above all, you could trust Dick. Looking back, Dick not only taught me how to work with enzymes, but he provided an environment that made doing science fun.

Oike C. Uhlenbeck
Professor and chairman
Department of biochemistry,
molecular biology and cell biology
Northwestern University

Dick and I had a wonderful scientific collaboration that lasted 25 years. I was trained as a geneticist, but Dick’s knowledge and background in nucleic acid-binding proteins gave me an appreciation for the power of biochemical approaches to problems.

Two of Dick’s most prominent characteristics were his wit and wonderful sense of humor. I remember a particularly long group meeting, where it seemed that no progress had been made in one of our projects. Dick took
out the fountain pen he always carried and wrote me a note. I thought he was going to suggest that we end the meeting. When I read the note it said: “This is why the university pays us these fantastic salaries.”

Jeffrey F. Gardner  
Professor of microbiology  
University of Illinois at Urbana-Champaign

Dick had a wonderful, quirky sense of humor, and he peppered the lab with absurd pictures and sayings. Over the sink was a drawing of a snail, titled “The Pace of Research.” As a graduate student in his lab, I thought that it was just a funny cartoon. However, I came to understand that it represented what made Dick such an outstanding scientist and effective mentor. He taught us that, to do science right, you must be careful and methodical — in technique, of course, but especially in your reading of the literature and design of the experiment. However, what made Dick so special was that this rigor was coupled with an unusually kind and generous spirit. He considered every scientist, from undergraduate student to seasoned primary investigator, to be a colleague. I feel exceptionally privileged to have had him as my thesis mentor.

Deborah Hinton  
Chief, gene expression and regulation section  
Laboratory of molecular and cellular biology  
National Institute of Diabetes and Digestive and Kidney Diseases  
National Institutes of Health

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Mildred Cohn Retrospective continued from page 13

My interactions with Mildred date back to the 1970s when I became a postdoc in the laboratory of Ernie Rose at Fox Chase Cancer Center. She was very cordial, intellectually stimulating and already a legend, making her a bit intimidating for me at the beginning of my career. Our interactions became much more personal when I found myself on the verge of divorcing and becoming a single parent. Mildred stepped in, had me to dinner at her home, and more or less took me under her wing. This friendship/mentorship was to endure for many decades, through Mildred’s sabbatical to Berkeley and the decades that followed.

Our interests in stable isotopes and their use in reaction mechanisms and enzymology were one thing that drew us together. A second was the never-easily-answered question of how to raise a family and be active in science. Mildred will always be my heroine in this regard. Lastly, there was the bond of two women who became friends and cared about each other. I have one particularly fond memory of introducing Mildred, who was visiting her family in California, to my mother who had moved to California. My mother insisted that we make cookies together, and I don’t think Mildred liked being ordered around by my mother in the kitchen at all.

Both Mildred and my mom are now gone, and I can only smile broadly when I think about this moment. I am deeply saddened by the loss of Mildred. She was truly a grand lady — in every way.

Judith Klinman  
Professor of molecular and cell biology  
University of California, Berkeley

In 1960, when Mildred Cohn and Henry Primakoff were contemplating moving to the University of Pennsylvania because Henry had been offered a great professorship in physics, Mildred approached Lucile Smith and I (we were the only two female faculty members in what was then the Johnson Foundation for Medical Physics) to ask how we felt about women being treated at Penn. Lucile had moved to Dartmouth Medical School and had not been happy with her experiences at Penn. However, I responded that, although the director, Britton Chance, was a tough taskmaster, he was equally fair to both women and men. When the chairman of the department of biochemistry (Samuel Gurin) indicated he did not want a female faculty member in his department, Brit was delighted to welcome Mildred to his faculty.

Helen C. Davies  
Professor of microbiology  
University of Pennsylvania  
School of Medicine